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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,958	09/24/2003	Karl A. Hanold	155692-0034	9431
1622	7590	11/15/2005	EXAMINER	
IRELL & MANELLA LLP 840 NEWPORT CENTER DRIVE SUITE 400 NEWPORT BEACH, CA 92660			JOHNSTON, PHILLIP A	
			ART UNIT	PAPER NUMBER
			2881	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/672,958

Applicant(s)

HANOLD ET AL.

Examiner

Phillip A. Johnston

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-91 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-91 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Detailed Action***

1. This Office Action is submitted in response to amendments dated 7-18-2005, and 8-25-2005, wherein claims 1-91 are pending.

2. It is noted herein per applicants remarks filed 7-18-2005 that, the applicant has removed any claim of priority to earlier applications, so that the effective filing date of the subject application number 10/672,958 is therefore September 24, 2003.

***Claims Rejection - 35 U.S. C. 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-91 stand rejected under 35 U.S.C. 102(e) as being clearly anticipated by Park, U. S. Patent No. 6,410, 914.

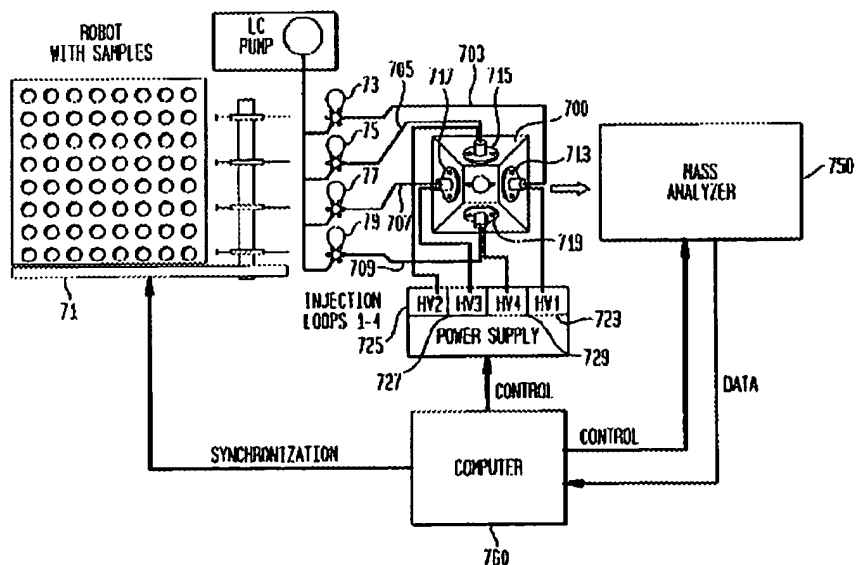
Park (914) discloses the following;

(a) An ionization chamber for a mass spectrometer having ports 42-45, which accept plural orthogonal sources including electrospray and lamps that are multiplexed (switched) for synchronous and/ or asynchronous operation, as recited in claims

Column 8, line 52-61; Figures 4A-4C, and Figure 7 below;



FIG. 7



(b) The use of plural source types including electrospray, photoionization and chemical, as recited in claims 1-4,15,21-24,41-43,55-57,62-65,74,75,84, and 85. See Column 1, line 65-67; Column 2, line 1-25; and Column 8, line 52-61;

It is implied herein that Park's (914) disclosure of the use of a laser desorption-ionization source in the chamber is equivalent to use of a photoionization source, as claimed above.

(c) The use of computer 760 to control source switching sequentially and/or simultaneously, as recited in claims 7-16,27-36,44-5,68-73,78-83, and 86-91. See Column 4, line 54-67; Column 11, line 12-32; Column 12, line 12-31; Column 13, line 1-15; and Figures 9,10, and 12 below.

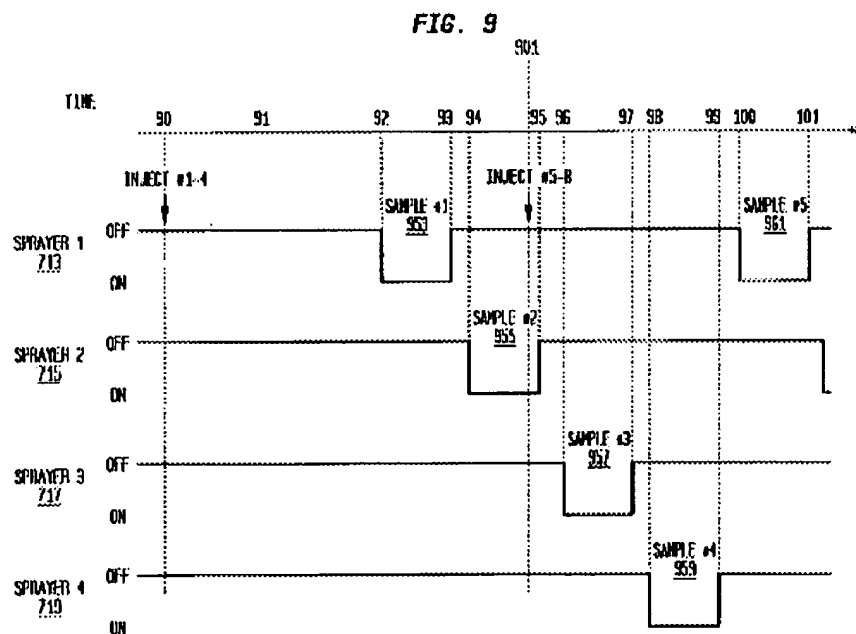


FIG. 10

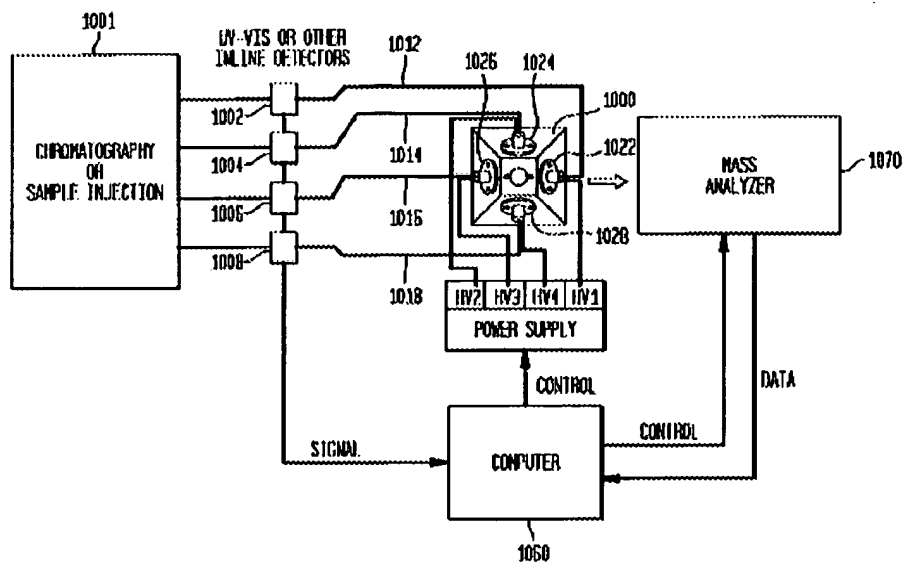
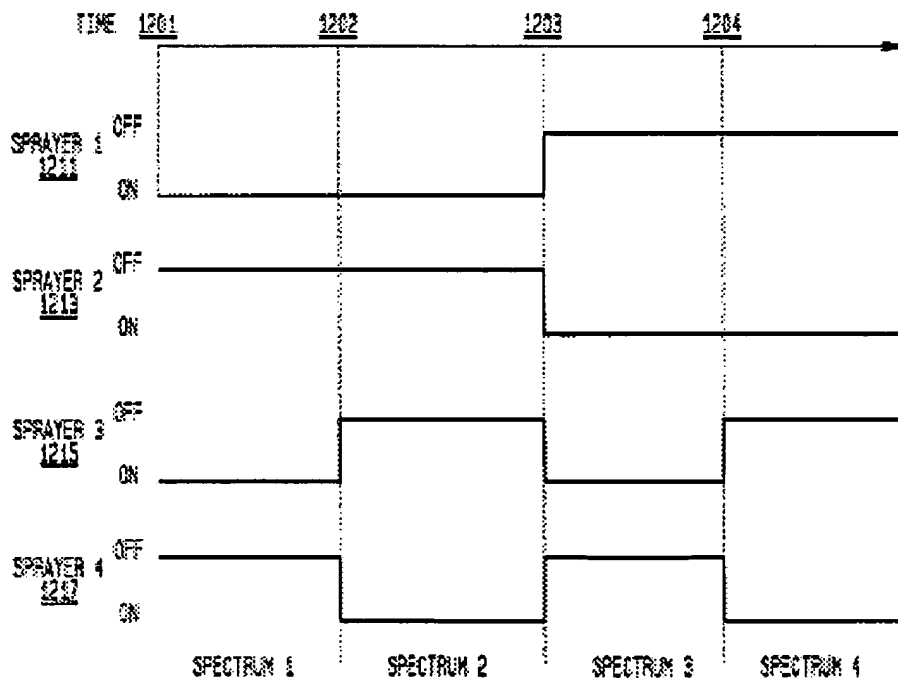


FIG. 12



(d) The use of a differentially pumped vacuum interface, sample pumps, injection loops and transfer lines, as recited in claims 5,6,17-20,25,26,37-40,52-55,58-61,66-73, and 77-83. see Column 2, line 51-61; Column 5, line 34-40; Column 9, line 58-67; Column 10, line 8-28; and Figure 7 above;

(e) Sprayers 713, 715, 717 and 719 are electrically isolated from the ionization chamber 700 and the potential on each sprayer is controlled via high voltage power supplies 723, 725, 727 and 729, as recited in claims 14 and 39. See Column 10, line 1-7; and Figure 7 above.

### ***Examiners Response to Arguments***

5. Applicant's arguments filed 7-18-2005 have been fully considered but they are not persuasive.

Arguments 1 and 2.

Applicant states that "Parapaph 3(a) of the Office Action states that Park discloses multiplexing between electrosprays and lamps. The Examiner seems to imply that the "lamps" are photoionizers. The Applicant believes that it is not inherent that lamps would necessarily photoionize a sample. For example, the lamps may be used to illuminate the chamber for viewing purposes. Column 7, lines 6 - 8 of Park states that sprayers, or other devices such as lamps, microscopes, or cameras can be attached to the chamber. Thus Park contemplates the use of microscopes and

cameras to view the ionization chamber. It would be logical to include a lamp to illuminate the chamber for viewing through the microscope or camera. For something to be inherent, it must be necessarily so. The mention of lamps in Park does not necessarily mean that these devices are photoionizers. The Applicant therefore contends that the mentioning of lamps in Park does not inherently mean that such devices are photoionizers. Additionally, Park does not disclose, or suggest a switch that controls the lamps and an electrospray ionizer to control different modes of operation. Park provides no disclosure on switching between the lamps and the sprayers.

Paragraph 3(a) of the Office Action states that Park discloses a plurality of ionization sources including electrospray, photoionization and chemical ionization. The Examiner has cited columns 1, 2 and 8 of the Park reference. Columns 1 and 2 of Park are background material that, discuss the various type of ionizers that can be used in a detector. The background of Park is merely a catalog of different ionizers. This section of the Park Patent does not disclose or suggest usage of an electrospray and an photoionizer in conjunction with a switch that can create different modes of operation. Column 8, lines 52 - 61 of Park disclose other types of sprayers including APCI, but this section does not disclose or suggest the use of a photoionizer, nor does this section disclose or suggest a switch that can control a photoionizer and an electrospray to create different modes of operation. For all of the above reasons, the Applicant submits that Park does not anticipate claims 1 - 91 of the above entitled application."



Regarding Park's (914) disclosure of lamps as photo-ionizers; the applicant is respectfully directed to Merriam Webster's Collegiate Dictionary, tenth edition wherein the term lamp is defined as, a device for producing light.

The applicant is also respectfully directed to the McMillan Encyclopedia which defines photoionization as; The ionization of an atom when it is bombarded with electromagnetic radiation.

The applicant is further respectfully directed to Park (914), Column 2, line 15-23, which states; In the MALDI process, analyte is dissolved in a solid, organic matrix. Laser light of a wavelength that is absorbed by the solid matrix but not by analyte is used to excite the sample. The matrix is excited directly by the laser. The excited matrix sublimates into the gas phase carrying with it the analyte molecules. The analyte molecules are ionized by proton, electron, or cation transfer from the matrix molecules to the analyte molecules.

The examiner has interpreted from the references above that the use of lamps in the Park (914) ionization chamber, includes the use of lasers in MALDI applications, and that the ionization produced by the MALDI laser source is photoionization.

Regarding Park's (914) disclosure of a switch to create different modes of operation; the applicant is directed to the complete Background of the Invention in Park (914) found in Columns 1-3.

Also Column 3, line 61-67; and Column 4, line 1-19, which states; Prior art ionization chambers are inflexible to the extent that a given ionization chamber can be used readily with only a single ionization method and a fixed configuration of sprayers.

For example, in order to change from a simple electrospray method to a nano electrospray method of ionization, one had to remove the electrospray ionization chamber from the source and replace it with a nano electrospray chamber (see also, Gourley et al., Angled Chamber Seal for Atmospheric Pressure Ionization Mass Spectrometry, U.S. Pat. No. 5,753,910). Thus, a need exists for an ionization chamber which maximizes flexibility and efficiency of use as between various types of samples and analytical methods.

The present invention provides an ionization chamber having a plurality of ports. The ports can be identical in diameter, length and orientation if, for example, a series of identical devices are to be used in the ports. Alternatively, the diameter, length and orientation of a port may be different from one or more of the other ports. In the embodiments of the present invention which use differing ports, different devices may be used and/or different angles may be used to direct the electrospray, for example. Other embodiments include the use of the plurality of ports in a time modulated manner.

As well as, Column 10, line 54-67, which states; Initially, all sprayers are "off". That is, solution is flowing through and being nebulized by the sprayers 713, 715, 717 and 719, but the potential applied to the individual sprayer is inadequate to produce an analytically significant number of ions from the spray. The time 83 at which the first sample arrives at the first sprayer is known by the above equation or by previous experiments. At this time 83, the first sprayer 713 is turned "on" by applying an electric potential adequate to produce an analytically useful ion signal. After a predetermined

time the first sprayer is turned off (time 84). Similarly, the second sprayer 715 is turned on at time 85 only when the second sample is at the second sprayer 715 and the third and fourth sprayers 717 and 719 are turned on only while the third and fourth samples are at the third and fourth sprayers 717 and 719 respectively, times 87 and 89 respectively.

The examiner has interpreted from the Park (914) references above that the Park (914) invention is specifically directed to solving the problem of inflexible prior art ion chambers, by providing an ion chamber design with multiple ports, for use with all the various ionization devices available in the art, which can then be switched on and off as ones mass analysis application requires.

### ***Conclusion***

6. The Amendment filed on 7-18-2005 under 37 CFR 1.131 has been considered but is ineffective to overcome the Lepejian (714) and Okubo (862) references.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

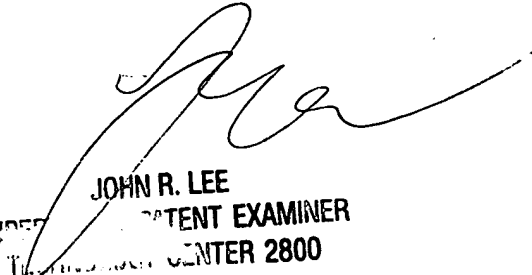
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 6:30 am to 3:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor John Lee can be reached at (571) 272-2477. The fax phone number for the organization where the application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJ  
November 7, 2005

  
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